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ABSTRACT

This document presents the elementary-secondary, competency-based teacher education program of the College of Education, University of Houston, its underlying rationale, program design, and implementation procedures. Based upon the premise that there is a distinct discipline of teacher education, the program expands upon five propositions: the teacher (1) is a liberally-educated person with a broad background in his teaching field; (2) reflects in his actions that he is a student of human behavior; (3) makes decisions on a rational basis; (4) employs a wide variety of communication and instructional strategies; and (5) exhibigs behavior that reflects professionalism. Sixteen competencies, developed to reflect the five basic propositions, are presented. The rationale and structure for activity sequences which develop teacher skills in these competencies are discussed. Background history of program development, implementation, and revision are given. Eight broad conclusions, drawn from Houston's experience in designing and implementing the program, are presented to aid others in pursuing a similar course. (HJB)

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Applying Systems Theory to Program Design
Development of Houston CBTE Program
W. Robert Houston
Howard L. Jones

*Performance-Based Teacher Education Project*
*AACTE*

Competency-Based Education

## THE INNOVATION WHICH SOONER OR LATER AROUSES NO RESISTANCE MUST BE EXTREMELY TRIVIAL

Perhaps to a greater extent than any other recent movement in education, competency-based education has attracted more attention, advocates, and more antagonists. Within its short history, 17 states have proposed CBE as an alternative means to certify teachers, 131 universities operate CBE programs, Federal projects mandate it, AAUP damns it, researchers decry its lack of supporting evidence, and proponents propose it as a way to collect such evidence.

The basic assumptions of CBE are difficult to refute. All professional schools would like to prepare lawyers, physicians, or teachers who are competent; clients of these professionals clamor for the same goals. CBE takes the stance that certification will be made only when such competence is demonstrated by the prospective professional.

The concepts underlying CBE are relatively straightforward.[1] Competency statements are derived from the role of the practicing professional, explicitly stated in terms of what the learner is to demonstrate for successful completion of the program, and made public in advance of

[1] See Stanley Elam, Performance-Based Teacher Education: What Is the State of the Art? (Washington, D.C.: American Association of Colleges for Teacher Education, 1971); Joel Burdin (footnote his Fastback in this series); W. Robert Houston and Robert B. Howsam, Competency-Based Teacher Education: Progress, Problems, and Prospects (Chicago: Science Research Associates, 1972); January, 1974 issue of Phi Delta Kappan; Fall, 1973 issue of the Journal of Teacher Education.

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instruction. While such competencies may include cognitive objectives (what the prospective professional knows), the primary emphasis is on performance (what the prospective professional can do), and consequence objectives[2] (what the effect of the prospective professional is on their clients). It seems more important that professionals be able to practice their art, and to bring about positive change in clients, than to simply know about professional actions. Within a CBE program, learner progress is contingent upon demonstrating competencies. Assessment and instruction are derived from and linked to competencies. Thus, the total program is designed around statements of competencies--competencies assumed to be integral to the role of a professional.

CBE is primarily an approach to instruction; the value of a specific CBE program depends largely on its competencies. Some institutions have made extensive literature searches, worked with practicing professionals, developed theoretical constructs, and finally designed an integrated program. Others have simply rewritten goals and activities for each of their courses into behavorial objective formats, and called themselves CBE. Some programs have carefully edited their objectives and continued to improve assessment systems; others are not so concerned with continual revisicn and improvement. Some are committed to innovations; others to traditional approaches. Yet all claim to be competency-based![3]

While there may be some variance in the definition of CBE itself, the distinguishing feature of most CBE programs is the way in which designers identified competencies, the innovativeness of their approach, the congruence

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[2]James M. Cooper, Wilford A Weber, and Charles E. Johnson, A Systems Approach to Program Design (Berkeley, Calif.: McCutchan, 1973), page 2

[3]The Consortum of CBE Centers has proposed a set of criteria to describe programs according to the extent to which they model certain characteristics of CBE.



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between program requirements and the needs of beginning teachers, and the usefulness of instruction and assessment procedures.

This Fastback describes one CBTE program, its underlying rationale, program design, and implementation procedures. It is not presented as an exemplar for other programs, but simply as a description of how one group went about the task of improving teacher education.

Perhaps the most effective way to grasp initially the program is to tour the College of Education, University of Houston and then go to a nearby elementary school. We'll talk with some of the people as we go; we want you to feel the program as well as to be able to describe it. But let's follow CBE principles and make our objective clear and public. After reading the following tour and observing accompanying pictures, you will be able to describe several of the activities in the CBE program and discuss the rationale for their inclusion.

## Observing CBE in Action: The Top of an Iceberg

Before we start our tour of the College, perhaps some background will put the visit in perspective. The College of Education building was completed in 1971--open in design with large spaces, moveable walls and furniture, wide glass areas; designed to model innovative school plants and to reflect a new style of teacher education. The University with its 26,000 students and situated in the inner city of Houston, affirmed the importance of Teacher Education by locating the College of Education on the central mall of the campus. The modern facility and tree shaded campus contrasts vividly with the deteriorating homes which surround it. The mission of the College is not only to innovate and study teacher education, but to deliver viable programs for teachers in inner-city schools.

We will begin by taking an elevator to the fourth floor and walking down. Room 416 is a seminar-sized room, like a dozen others, for 12-20 people. These rooms provide for vital interaction, an opportunity for people to express themselves, to explore ideas, to probe attitudes and feelings.

Today, Don Edwards is interpreting the results of several tests for 15 prospective physical education teachers. Several weeks earlier, in September, they completed a battery of tests which included the Edwards Personal Preference Test, Minnesota Teacher Aptitude Inventory, Rokeach Dogmatism Scale, Work Motivation Index, and the Vocational Preference Index. These tests were machine scored; norms drawn for the 600 students in the beginning phase of the program; and now Dr. Edwards, member of the Counselor Education Department, discusses results with students. Each student examines his own test results as Don Edwards describes what various scores may mean, interprets profiles, answers questions, and leads a lively discussion. Individuals may confer individually with him for follow-up of personal concerns.

As the session ends, we stop Chris and Ginger, asking them how this fits into their CBTE program. "We are just beginning," they tell us. "This initial part of our first set of experiences is called 'Career Decision Experiences.' Within a few weeks we are expected to decide whether or not teaching is for us, and what age and kind of children we feel we can work best with. Now we are gathering information and ideas to make those decisions."

"Could you describe some of the Career Decision Experiences?"

"We are visiting and working in three school settings during a six-week period--the two of us plus Marshall and Ron visited Red Elementary School, Ryan Middle School, and Sharpstown High School. We had specific questions to

ask and observations to make in each. Basically, we wanted to know what teachers did, what students were like, and what the school was like. Although we have been out of high school only two years, we were surprised at how little we really knew about schools. My seminar leader calls this our "reality training."

"We also completed an Employment Module which included information on job availability, salary and benefits, and problems faced by beginning teachers--information which might help us decide about teaching. Then there was a Multi-cultural Module which introduced us to varying values in schools, and helped us understand our school observations. We will continue this study throughout the program so this is just the initial dose!"

"The 15 people you saw today meet weekly in a seminar as part of Career Decision Experiences. This provides us with an opportunity to discuss what we have seen and to determine what we need to focus observations on in our school next week."

As Chris and Ginger leave we might point out that, as a result of these experiences, about ten percent of our students will decide not to teach and another ten percent will change from secondary to elementary education.

On the third floor we see an open-area Learning Resources Center. Open stacks include slides and audio tapes, reels of television tapes, programmed materials, and other instructional materials neatly boxed, labeled, and numbered. Casually spaced around the Center are about forty individual carrels while hexagonal tables provide for small group activities.

In one carrel, a young man intently watches a slide/tape on Goals and Objectives. He too is in the beginning phase of this program and is expected

to demonstrate that he can write instructional objectives. He has chosen slide/tape instruction in lieu of a written presentation, programmed text, or a class lecture. The method of instruction in CBE is not so important as his being able to write objectives with technical skill. He decided which activity to pursue as part of a module. The module, "Instructional Objectives" includes a prospectus, objectives, listing of alternative instructional activities, and a sample assessment. To demonstrate competence with the objectives included therein, he must meet standards in a cognitive test on writing objectives.

In later parts of the program, he will apply this technical skill of objective writing as he plans lessons to teach. In addition, he will learn to evaluate the worth of objectives written for students he is teaching. The competency for which he will ultimately be held responsible to be certified is: "2.0--Identifies and/or specifies instructional goals and objectives which are based on learner needs."[4] Thus, these objectives and their attending activities are part of a whole host of objectives leading toward a broad and important teaching competency.

In another carrel, two students wearing earphones watch a 5-minute film in which the teaching tactic, Stimulus Variation, is modeled. This is part of a series of modules which introduce teaching skills (set induction, higher order questions, positive reinforcement, non-verbal behavior, and cognitive closure). Each module includes written materials and a film modeling the skill. Early in the program, students use these skills in micro-teaching situations. The emphasis is on doing, not just learning about teaching.

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[4]The listing of all competencies may be found in a subsequent section of this Fastback.

experiences before internship or student teaching. This session today was a preparatory session designed to determine if she could use in an integrated way the teaching skills she had demonstrated in previous phases. While students may begin by focusing on one skill or area of professional competency, we continually press for integration within a context. If you want to see how they start acquiring these individual skills why not talk with Sam Miller over there. He's working with some beginning students now."

In a small room nearby, four students and their instructor, Dr. Miller, a music educator, are viewing a peer taught lesson. Each of the four has taught a lesson and now they are collaborating in the critique session. Elizabeth is watching a taped lesson for instances of reinforcement, John for set induction and closure, Kelly for stimulus variation, and Renda for higher order questions. Following the taped replay each will share his data with Kelly who taught the lesson, then the group will analyze the data and draw conclusions related to competency demonstration. By collecting and analyzing data on self and others, students become more sensitive to what they are doing, and why. More importantly, they begin to work together as a team.

In walking down the glassed staircase to the second floor, one looks down on several classes being conducted in the huge open area. In one James Anderson is lecturing to a group of students on Afro-American culture. This is an optional part of a multi-culture series of expectations. Jay Shores demonstrates the use of systems theory in planning a lesson nearby; other students independently work with Cusenaire rods in a mathematics laboratory.

These open classrooms reflect the character of the building and program. Teaching is open; occasionally a person stops to listen to a particularly

interesting discussion, then moves on. Open classes in the college reflect that same openness found in many new schools in this country. One College of Education goal, "exemplify what you explicate" formalizes the old adage, "practice what you preach." So practicing openness and modern methods becomes part of the program--and a way of life.

Communication between students and faculty and among students in an individualized program poses a problem. Often there is no regularly scheduled meeting for such a purpose. On the second floor at the foot of the staircase is a set of student-faculty mail boxes. Messages can be left and picked up; papers returned; modules and materials passed along.

On the first floor in a large round auditorium called the Kiva, students are listening to a lecture on psychological development of children. This is one of the optional activities for objectives in the Psychological Foundations modules. A series of small counseling rooms also are located on the first floor. They are connected by one-way glass in such a way that graduate students in counselor education can observe instructors working with students. In one room Bob Ward, Professor of Counselor Education is providing Personal Assessment Feedback to a student. This service is provided to students in the second phase of the program, and builds upon the results of tests administered early in the program. These feedback sessions, however, are always with individuals. The system was designed at the R&D Center for Teacher Education at The University of Texas. Parenthetically, when graduates of our first experimental CBTE group evaluated their program, the PAF was judged as one of their most valuable personal and professional experiences.

CBE, because of its performance base, requires field settings where students observe, act as teacher aides, tutor, and intern. Some things are

better studied at the college, others in the school and community. The Houston Teacher Center includes 20 school districts and a large number of schools, but today we will restrict our visit to MacGregor Elementary School, a predominately black school just a mile from the University where we can view the full range of school-oriented activities.

During the week, prospective teachers come to MacGregor on a prearranged schedule to observe, collect data, work as aides, intern. But on this day, Robert Underhill with two doctoral students and three classroom teachers is supervising 60 prospective elementary teachers as they work with nearly 100 children. Each prospective teacher is tutoring one or two pupils in mathematics. He will demonstrate that he can diagnose each pupil's mathematics progress, design lessons to improve achievement, and demonstrate in the post-assessment that the pupil has made progress toward specified goals.

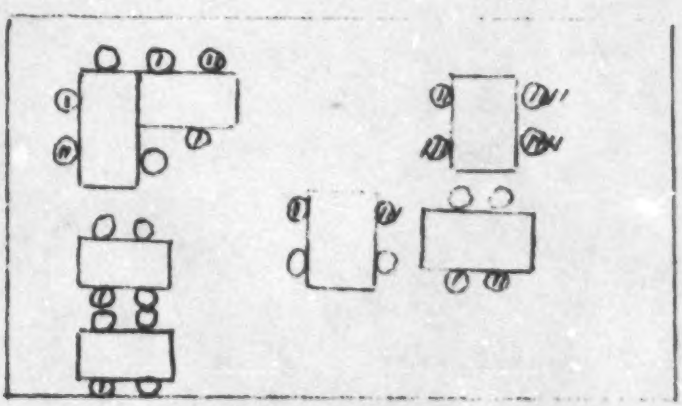
Since learning is an individual endeavor, prospective teachers should spend much time with <u>individual</u> pupils. Working with classes of 25 tends to blur individuality for many beginners. Cues from the faster learners leave the erroneous impression that all have learned. One-to-one contact and tutoring strengthens teaching effectiveness by sensitizing the prospective teacher to individual characteristics of students, and their reaction to his teaching actions.

In the third grade, an intern teaches the class while her teacher and a university supervisor observe. The intern has previously demonstrated competencies in micro-teaching and tutorial settings; now she is integrating them into a style which is uniquely her own. Being able to ask higher order questions or use positive reinforcement or diagnose a pupil's mathematical

achievement is not adequate; these must be integrated and thoughtfully used in a smooth teaching style which Bruce Joyce refers to as a "seamless web" of actions.

The university supervisor is using a style of Clinical Supervision developed by two University of Houston faculty members, James Cooper and Audry Graves. Prior to instruction, the prospective teacher discusses her plans and contingency plans with the supervisor; then they jointly determine which of the intern competencies the supervisor would collect data on. Following the lesson, feedback is based on <u>data</u> rather than conclusions about performance. Let's listen in to part of one such conference.

Supervisor: "One of your objectives was to stimulate class discussion so that at least half the students participated verbally, and all appeared to be interested. To determine the extent to which this objective was met, I drew a diagram of your class and marked a tally for each student as he participated. Let's look at this chart."



Intern: "Well, I did get more than half of the students involved but it's obvious that most of the conversation came from one table. And that back corner just did not seem to say anything."

Supervisor: "Students talked 30 separate times, and 14 came from one table. How did you feel about that?"

Intern: "I knew they were talking more than anyone else--it seemed that everytime someone in the class said something, they had an idea to express; but I did not think they talked that much."

Supervisor: "Did your location in the room have anything to do with it?"

Intern: "Well, I did stand next to that table; at the time it seemed the natural thing to do."

Supervisor: "You attempted on several occasions to bring in pupils in the back."

Intern: "Yes, but they just didn't respond. Perhaps if I had changed my position at that time it might have helped. Also I might have asked a question and looked at them to encourage them to respond."

Supervisor: "Those are good ideas. I also recorded the types of questions you asked and the replies pupils gave. You asked twelve questions ...."

And so it goes; the supervisor provides data upon which joint assessment can be made and improvements contemplated. This process was initiated in Phase I and continues throughout the program. It is the result of one of the five propositions upon which the program was designed.

The glimpse of the program in this section, of course, is not complete. Hopefully it does provide a flavor for the total program. In the next sections, more of the effort can be viewed from a theoretical and historical view.

## Unseen Part of the Iceberg: The CBE Design

### Need for Design

Most preparation programs in teacher education are characterized by their lack of unified, cohesive, directed efforts. There is a distinct lack of interrelatedness as many individual faculty in several departments each go their separate ways. The mottled patchwork called a curriculum often is a jumble of contradictions, feats, old wives tales, unexplained and undefined theories, and little translation of theory into viable practice. Consequently, even that practice cannot be used to improve the student or the program.

Much of the resulting teaching of teacher education graduates relies on intuition, with the more perceptive teachers being more effective, not because of the training program but almost in spite of it. Reliance only on the intuitive person suggests that there is no distinct discipline of teacher education, and never could be. The program at the University of Houston is predicated on the belief that such is not the case. Five propositions regarding the role of the teacher were specified early in program design, and form the basis for subsequent delineation of competencies and objectives, development of instructional materials, and design of evaluation procedures.

### Five Propositions

1. The teacher is a liberally-education person with a broad background in his teaching field. This proposition emphasizes the responsibility of general education and major fields of study in the arts and sciences to provide a rich basis for teaching. Actually, only a small portion of a prospective teachers professional preparation occurs in the professional College of Education (of 122 credits, 43 for elementary and 18 for secondary

are in Education). While recognizing the importance of academic preparation, it is this professional program which is competency-based and which is described herein.

2. The teacher reflects in his actions that he is a student of human behavior. Teaching is an applied behavioral science: knowledge alone is not sufficient. Teachers should demonstrate the full range of competencies derived from psychology, multi-cultural education, socio-linguistics, sociology, philosophy, and anthropology. Further, such understandings are translated into actions which reflect a realistic understanding of self and others.

The program includes a number of objectives related to this proposition. The testing program briefly described above for early portions of the program is designed to help prospective teachers better understand themselves, their values and motivations, and their relationships with others. This self-understanding is basic for teachers who may be helping students better understand themselves. A series of optional affective modules permit prospective teachers to explore competencies related to Sharing Self with Others; Communication: Listening and Responding; Awareness of Self in Relation to Others; Communication: One-way and Two-way; Professional Ethics; and Group Process. Members of the Counselor Education faculty are available when students request personal assistance; this support staff has been invaluable in personalizing the program.

In a major part of the program, students choose competencies from a wide range of the behavioral sciences; studying about Piaget and other learning theorists, sociological principles and trends, influences of multi-cultural education, and the evolving city in America. The emphasis is on developing

skills and using them, and applying knowledge of the behavioral sciences in classroom practice.

These two program aspects--self understanding and formal study of the behavioral sciences--support program elements derived from the premise that teachers who better understand themselves and others are likely to be more effective teachers.

3. The teacher makes decisions on a rational basis. The rational approach to decision making, and its attending paradigm, permeates the training program so that the prospective teacher can analyze important functions of his roles and the consequences of action.

The actions of the professional constitute an interrelationship between theoretical considerations and behavioral manifestations. The process includes four stages. (1) Goals and objectives are delineated and based on perceived needs. (2) Strategies for achieving these goals and objectives are planned. (3) Plans for achieving goals and objectives are implemented. (4) The extent to which goals or objectives are achieved is evaluated.

Some notes about this model are in order. First, it can be applied to any professional action, whether it is teaching, self-development, or organizing for management. Each requires goal setting, planning, acting, and evaluating. Second, the cycle sometimes is completed quite rapidly while on other occasions it may require weeks or months; it is not time-bound. Third, evaluation leads back to goal and objective setting--speculating on whether objectives are to be changed, or implementation strategies, or bo

This rational approach is predicated on the belief that when professionals systematically analyze important functions of their roles and evaluate the consequences of their actions, they are more likely to be effective. Within

the program, students are exposed to the rational approach to lesson planning where they diagnose learner needs, set objectives, plan to achieve objectives, teach, and evaluate results of teaching on the basis of objectives achieved. This process is embedded early in the program in the micro-teaching lessons and later during internship with classes of pupils. The process is integral to clinical supervision; it is emphasized by counselors; it forms the basis for advisor discussions with students about which competencies are to be demonstrated.

4. The teacher employs a wide variety of appropriate communication and instructional strategies. This proposition is drawn from the premise that teachers who have a wider repertoire of skills and techniques of instruction, management, and communication are more likely to be effective. At one point in the program, teaching tactics such as questioning skills, set induction, and positive reinforcement are studied and demonstrated in micro-teaching settings. Later, they are expected to be embedded in more complex instructional procedures.

Some students learn to code and interpret the coding of their classroom interaction using schedules such as those by Ned Flanders, Gene Hall, Chuck Galloway, or Irv Miller. All use a variety of data collection systems to describe teacher and student actions.

5. The teacher exhibits behavior which reflects professionalism. This includes the ability to work closely with other persons in solving problems as well as continual self-assessment. Again, the rational model is applied so that effectiveness can be increased in a ever-changing social context.

Competencies

In designing a program based on these prepositions, the staff decided to conceptualize the total professional program rather than individual courses or segments of the program.

Competencies for which the prospective teacher is held accountable during internship are listed below. These do not include the many sub-competencies in preceding portions of the program, but do reflect the five propositions identified above. They were logically derived through actions to be described later in the Fastback.

1. Diagnosis learner emotional, social, physical and intellectual needs.

It is expected that the teacher will draw upon knowledge of human growth and development, learning theory, social-cultural implications, assessment techniques, curriculum content in order to gather information about the learner and to identify descrepancies between where he is and where he "ought to be."

2. Identifies and/or specifies instructional goals and objectives which are based on learner needs.

The teacher should also be able to reconcile curricular/educational goals with the present level of learner needs to identify instructional goals; analyze instructional goals to identify knowledge, skills, attitudes needed to accomplish instructional goals and state objectives so that intent is communicated to learner.

3. Designs instruction and assessment appropriate to goals and objectives.

In instructional design the teacher would develop an overall strategy for achieving instructional goals and objectives in which selections from cultural, socio-economic background of learners, instructional models and teaching skills, classroom communication patterns, resources, organizational and management strategies, assessment procedures are incorporated.

4. Integrates into instruction the cultural and socio-economic backgrounds of learners.

In meeting the needs of learners, the teacher would incorporate materials, examples, illustrations, verbal and non-verbal communication patterns, motivators and reinforcers from the learner's background so that learner is able to identify with both the content and processes of instruction.

5. Demonstrates a repertoire of instructional models and teaching skills appropriate to specified objectives.

Here the teacher encourages and supports cognitive and affective input, an exchange of ideas, self exploration, seeking alternatives, and personal realization of learners. The teacher also facilitates learning experiences with systematic personalized instructional approaches to effectively meet changing needs and situations.

6. Promotes effective patterns of classroom communication.

The teacher is an equal participant in group and encourages interaction among all members of the group. This competency reflects the fact that effective communication includes more than reading, writing, and speaking; it includes such specific techniques as learning what is worth communicating, recognizing the value of effective communication; accepting and supporting ideas of others, and striving for more productive communication.

7. Uses resources appropriate to instructional objectives.

The teacher here demonstrates that he can operate audio-visual equipment, make instructional materials appropriate to objectives and identify where materials are available. The teacher should be able to individualize resources in classroom, use community facilities as well as CAI and other educational technology.

8. Uses organizational and management skills to facilitate and maintain social, emotional, physical, and intellectual growth of learners.

The teacher here would be expected to create and maintain a physical setting and a socio-emotional climate which capitalize on the affective dimension of human interaction within the context of the classroom group to foster learner achievement; similarly the teacher should be able to demonstrate teaching behaviors which promote productive group interaction.

9. Monitors processes and outcomes during instruction and modifies instruction on basis of feedback.

This competency requires the teacher to demonstrate his ability to monitor continuously what is happening in the classroom and to make adjustments when needed. The teacher makes on-line decisions regarding the success of both the instructional processes and the achievement of objectives. To do this the teacher must be sensitive to classroom indicators which can help him make these decisions.

10. Uses appropriate assessment procedures to evaluate learner achievement.

When the teacher has determined instructional goals and objectives, he must also determine how they can be evaluated. To do this the teacher must be able to assess different types of objectives (cognitive, affective, psychomotor).

11. Exhibits openness and flexibility in making rational instructional decisions.

The proficient professional is constantly searching for ways of improving instructional effectiveness. It would be expected that a teacher demonstrating this competency would critically examine others' ideas. This teacher would not offhandedly reject curriculum materials or instructional ideas developed by other teachers or commercial producers without careful study or trial. Similarly the proficient teacher would not join in any new idea that developed simply because it is new, but would base his decision on the best available data with respect to instructional effectiveness.

12. Identifies and reacts with sensitivity to the needs and feelings of self and others.

There is general agreement that for education to produce happy, healthy learners, there is a need for happy, healthy teachers. The proficient professional demonstrating this competency demonstrates a concern for the needs of his pupils, even so much as going beyond curriculum guides and texts. This teacher also recognizes that as a member of a learning group, he has needs which must be met in a teaching-learning situation. The sensitivity with which the teacher reacts to meet the needs of both learners and himself separates the truly proficient teacher from others.

13. Works effectively as a member of a professional team.

Those things demonstrated by teachers on a successful team operation include:

--exhibiting a willingness to be involved in team teaching;
--demonstrating a patience and a willingness to blend their attitudes and abilities toward a common (shared) outcome;
--show a willingness to devote necessary (extra) time and energy in planning, revising, and permitting one another to maintain his individuality.

14. Displays behaviors consistent with the goals and ethics of the teaching profession.

The teacher strives to exemplify the highest level of professional conduct; as well as identifying discrepancies between his present behavior and the behavior defined by goals and ethics of professional organizations. In addition the teacher should be able to identify ways to reduce any discrepancies.

15. Demonstrates an adequate knowledge of the subject matter which he is preparing to teach.

Most teacher education programs draw heavily on the disciplines. However, a major fault of existing teacher education programs is that the disciplinary approach fails to prepare teachers for the second facet of subject-matter preparation--the knowledge to be taught to learners. The teacher education program must insure that the teachers prepared demonstrate both types of subject matter knowledge. The teacher's subject matter preparation has two facets: study of the content of the disciplines themselves, and familiarity with the knowledge derived from them to be taught to the learners.

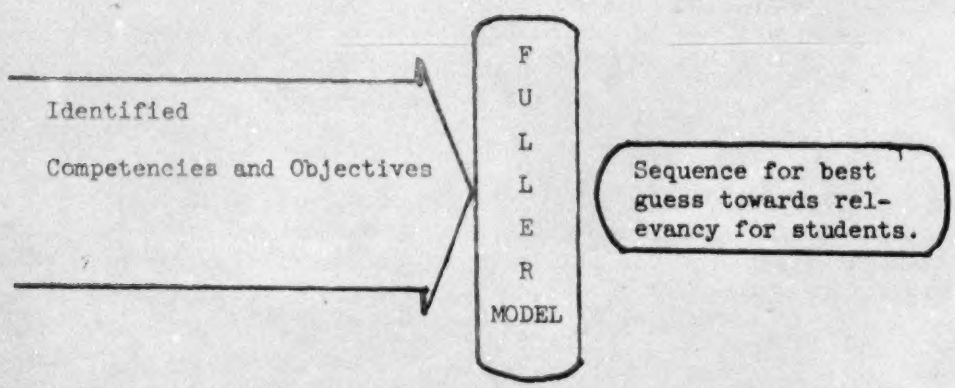
16. Analyzes teaching effectiveness and continually strives to increase effectiveness.

The proficient teacher should be able to use a variety of observational and analytic procedures in studying his teaching effectiveness as well as examine the consequences of his teaching by focusing on intended learner objectives and instructional design as compared to actual instruction and achieved learner outcomes.

Sequencing Program Elements

It is one thing to specify objectives and competencies in a logical order; it is another to sequence them for instructional purposes. The concerns model developed by Frances Fuller of the R&D Center for Teacher Education at The University of Texas at Austin provided a rationale and supporting research for ordering the program. Fuller postulates that the prospective teacher goes through a describable series of concerns. In the beginning, he typically is concerned with himself; he raises questions such as "How adequate am I?" and "Where do I stand?" He seldom asks "Where do I stand as a teacher?," "Are my pupils learning what I'm teaching?," or "How can I improve myself as a teacher?" These latter questions are asked only after teaching and other experiences with students.

Competencies and objectives were screened through the Fuller model. In addition to focusing only on "What Should the student be able to demonstrate?," the question became "At what time would prospective teachers receive the most benefit?"



While there is flexibility in student scheduling, experiences generated for students in the program were typically sequenced using the concerns model. Beginning students, most of whom were at early concerns, visited in public schools where they focused on getting to know the school and seeing the school operation from the other side of the teacher's desk. On campus, they interacted through affective modules designed to help them consider why they were in teacher education. In addition, beginning teaching skill modules introduced them to tactics for instruction. Peer teaching sessions with videotaping were followed by feedback sessions with an instructor and/or peers. The psychological testing sessions described earlier were also held during this period. All of these experiences were designed to push students into a concern about teaching tasks and pupil needs.

In the second level of concerns in the Fuller model, prospective teachers reflect concerns about themselves as teachers. They are concerned about their ability to survive as teachers in a school situation, about such things as discipline, peer pressures, and approval from cooperating teachers and principals. While they notice and work with individual students in their experiences, they still concern themselves with the job, rather than the outcomes they as teachers have for students. Prospective teachers who have reached the second level of concerns are ready to assume a teaching assistant role in the classroom rather than a teacher-aide role.

On campus, objectives were designed to promote more effective teaching; experiences focused on advanced teaching skills with more videotaping and feedback sessions. Socio-cultural modules sensitized students to the impact of cultural and physical environments on their school experiences. While the majority of objectives focused on the theory and use of instructional

principles in the classroom, one module went beyond this. The Phenomenological Module focused on a consequence objective. In the phenomenological module, the prospective teacher was expected to demonstrate increased self-concept of individual students as a result of interaction with the prospective teacher. This was the first of a number of subsequent consequence objectives in the program.

McDonald writes that "The ultimate justification of any program is the evidence that its teachers can and do help children learn."[5] The concern of a teacher for his impact on students is a Level III concern and typically is not achieved in initial phases of preparation. In designing this program, a basic premise was that this third level of concern--for impact on students--was our goal for all prospective teachers, and that activities would reflect student growth in this direction.

In the latter portion of the program prior to internship, prospective teachers translated generic skills and achievements into specific objectives related to their major area of teaching. Secondary education majors examined materials, resources, programs, and instructional procedures for their major teaching field. Elementary education students explored those areas related to teaching elementary pupils--reading, mathematics, social studies, language arts, and science. Options permitted some individualization as students concentrated on one or more academic fields. The tutoring experiences in mathematics, previously described, illustrate how by working with one learner, the prospective teacher is drawn toward a concern for him and movement toward impact concerns.

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[5]Frederick J. McDonald, "The Rationale for Competency Based Programs" in W. Robert Houston, Exploring Competency Based Education, Berkeley: McCutchan, 1974, page 18.

Fuller has noted that the movement of students from Level II (task) concerns to Level III (impact) concerns is the most time consuming, the most difficult and yet the most important transition toward professional status of all. To Fuller, this transition is probably the most important single professional gain that a teacher ever makes. Developers of a teacher education programs cannot ignore this.

The last portion of the program was internship or student teaching. Successful demonstration of competencies was expected in this setting, just as earlier in his program he was expected to demonstrate these competencies in simulated, peer, and small group situations. In addition he was expected to bring about pre-determined changes in students. The prospective teacher was held accountable for both affective and cognitive changes. Successful completion of internship and a recommendation for certification depended on his student's performances and attitudes.

## Designing the Program

The teacher education program just described is continually being revised. To establish any date for its inception or to specify a set of antecedents would do injustice to the multiple roots of the program, which are found in the educational and behavioral sciences, cultural mores, and the specific educational experiences and biases of the developers.

### Background for Development

While 1971 is used as the epoch for this program, numerous efforts in the College proceeded that time. By 1970, the faculty had planned and was ready to move into a new College of Education building which reflected sound educational thought and modern practice. A modest grant from the

Kettering Foundation stimulated faculty thought and facilitated a number of innovations. A proposal for the feasibility studies of the Comprehensive Elementary Models in 1969 reflected concern for testing new ideas. The science education staff had initiated a modified competency-based approach for elementary majors. And the faculty had engaged in a series of reflective self studies and analytical models for instruction. The climate was ripe for change when the College received in 1970, a grant from the Trainers of Teacher Trainers Program (TTT) of the U. S. Office of Education.

The TTT Grant became a catalyst in the CBTE movement at Houston. Seed money from the TTT grant permitted released time for developmental efforts toward the development of a coordinated undergraduate program.

A Teacher Corps intern program provided an opportunity to test CBTE ideas at the graduate level and to involve faculty in developmental efforts, dialogues on program design, and module writing. Thus, beginning in 1970, faculty from the University of Houston became more and more involved, not only in developing and prototype testing their program, but also in working and interacting with other program designers across the country. This active interaction stimulated a continual flow of new ideas, and an opportunity to test the thoughts of the Houston faculty on others who were concerned with similar problems.

Process of Development

A basic underlying premise of the developmental process was that change would be viable only to the extent that the major targets of the change process were involved. Viewed from a systems approach, it is not adequate simply to focus on single targets of change if viable and long term gains

are to be made. All effected parties must be considered, including:

(a) people concerned with teacher education,

(b) curricula studied by perspective teachers, and

(c) organization and communication structures within which teacher education programs operate.

It is evident that these targets which exist in interdependence and interaction in the real world cannot effectively be treated in isolation during a planned change process.

Changing People. Human systems have a considerable capacity to resist change and often return after change effort to a new equilibrium which closely approximates the old. Difficult as changing people's perceptions and behavior may be and is, the fact remains that it is the critical task. Programs for preparing teachers will never rise above the limits of what teacher educators can do.

A series of faculty seminars in which local and national educators presented papers on salient topics was held. Topics in the seminars included among others "Community Involvement," "Competency-based Instruction," "Micro-teaching," "Human Relations Model," "Personalizing Teacher Education," and "Sociological Perspectives." The Department of Curriculum and Instruction sponsored a one-day off-campus total faculty retreat to explore CBTE concepts and implications.

Previously described is the Personal Assessment Feedback System developed at the Texas R & D Center and administered to all students. When offered the opportunity, 27 faculty and 40 graduate students, student teaching supervisors, and other staff members completed the assessment inventory and received personal feedback from a member of the Texas R & D staff. To prepare for this

extensive use of the system, five counselors were trained by the R & D staff over several months--reading about the instruments, their rationale and administration procedures; working during a series of concentrated workshops with the R & D staff; scoring and analyzing trial batteries; and finally administrating the instruments to a pilot group of 30 non-CBTE students. Protocols from these students were verified by the R & D staff who certified the counselors.

Designing the Program. During the first year, faculty task forces made recommendations on several curricular areas and on instructional modules. Specific competencies for the program were delineated following a series of conferences with representative teachers, parents, and students. About 25 teachers and 8 university faculty worked to specify the tasks of teaching. These were then translated into a teacher competency list. Eight secondary teachers reviewed and revised the competency listings so that they were more specifically applicable to public school teachers in secondary schools.

On two occasions parents from six project schools met with the staff to articulate their perceptions of the characteristics of effective teachers. They emphasized the personal side of teaching, the need for flexibility, the need to understand the value systems of others, and the need to make students feel important and successful. While recognizing the role of the school in teaching skills, they returned again and again to the quality of the teacher as a person.

The staff taught elementary and secondary students while their teachers participated in program design activities. During this time, the staff probed students' perceptions of effective teacher characteristics and competencies.

A series of 60 interviews were held with teachers who had recently transferred to a school where the race of the students was different from that of the teacher. These so called "crossover teachers" provided insight into the problems and perspectives of teachers in new multi-cultural settings.

A summer institute for crossover teachers provided further insights into their problems, permitted the staff to test several competency statements, and supported the development of multi-cultural enabling activities.

Each of these developmental activities was designed to generate a field-oriented, reality-based, and cooperatively-developed set of competencies based on task analyses. Each provided a different and important perspective of the teacher's role.

One other major approach was used in defining the program--deductive analysis of the five propositions of the program; for each a set of more specific objectives were drawn and integrated into the program. Literature searches, particularly the Comprehensive Elementary Models, provided valuable ideas for competency statements and implementation procedures.

The program was still in developmental stages, materials not completely designed, and management problems surfacing daily when the first pilot group of students entered the program. Development continued concurrently with implementation, and sometimes only days ahead of student use of resources.

These 64 students--college juniors--about half of whom were pursuing secondary teaching certification and half elementary, entered the program in the fall, 1971. Forty-four had graduated and been certified through CBTE by January, 1974. A second pilot group entered a slightly modified program in the fall of 1972 (84 students) and 37 others were accepted in January, 1973. One year later 20 of these students had dropped from the program for one reason or another.

Receptivity to CBTE has varied widely within the College of Education faculty--the majority supporting the concept, some remaining neutral, some demonstrating opposition on philosophic, political, or pragmatic grounds. The faculty did, however, in the spring of 1973, commit the College to full implementation of CBTE. Thus, beginning in the fall, 1973, the first group of more than 600 students entered the CBTE undergraduate preparation program. This rapid increase in the number of students seriously strained resources--both human and materials--and existing management systems. The transition from pilot volunteer groups of 64 and 121 to non-optional program groups of 600 has pressed the faculty to reconceptualize program elements. Such a program must be able to function on regularly allocated state funds and still provide the necessary regeneration based on experience.

Impacting Institutions. It should have become quite evident from previous descriptions that the program has developed from the efforts of a number of institutions. Of primary concern has been the University which assumed its traditional leadership role in designing preparation programs. A Teacher Center was organized by the university as a collaborative effort with 20 area school districts and the organized teaching profession.

During the first year of the program, six elementary and secondary schools in Houston actively participated in the program; 10 during the second pilot year; and over 40 during the first year of implementation. These schools were selected (1) to represent a wide range of social, economic, ethnic, and racial settings; (2) whose personnel could provide necessary leadership; and (3) whose administrators were receptive to cooperative ventures and interested in teacher education. Students observed in these schools, participated in sociological and psychological studies, demonstrated

competencies in micro-teaching and total class settings, and taught in internship settings.

Within the College of Education, the program is organized as a inter-departmental teaming process. Teams of 4-5 faculty are assigned to work with groups of about 100-120 students. This organization tends to improve personal relations between staff and students and to encourage personalized alternatives. It does, however, press the university to make different commitments to faculty assignments. In the transition stages, certain faculty expertise, particularly with relation to generic teaching competencies, are sorely needed.

An Operations Committee, composed of six representatives from local school districts, six from professional organizations, and six from the university is responsible for providing direction to the Teacher Center. They make recommendations relative to new preparation programs, inservice programs for cooperating teachers, relations among institutions, and program management--particularly as it relates to inter-institutional matters. A larger (70 person) Council meets twice a year to consider general Teacher Center policies, and to suggest important new directions and needs in the preparation of educational personnel. In each school district, a three-person committee translates Center-wide policies into practice within the constraints of the district.

In all these groups, the three partners in teacher education are represented equally. This does not imply that all provide equal leadership. Each individual brings different personal attributes and competencies to the governing bodies while each institution has a history of responsibilities assigned to it by society. The primary responsibility of public school is

to educate children and youth, not teachers. The teaching profession is concerned with its membership, their competence and compensation. Within the university, only the College of Education perceives its primary mission as that of teacher education. Each institution brings to the consortium its own primary missions, its biases, and its contributions. Some Teacher Center activities are of intense concern to some institutions but of only peripherial interest to others. Thus, in decision-making, there is seldom parity in the true sense, for representatives do not choose to be equal.

## What Has Been Learned?

From our efforts in designing and implementing a competency-based teacher preparation program, several conclusions can be drawn which have implications for others engaging in similar ventures. These are briefly delineated in the following paragraphs.

1. College faculty and others concerned with teacher education would be involved to the extent to which they desire to participate. Some people want to be deeply involved in actually designing the program and are willing to expend the energy necessary for the task. Others only want to know about it; to be able not to be embarrassed if asked by someone about the program. Some wish to be consulted, particularly administrators, to be part of the management decision-making system.

2. While we would still emphasize total conceptualization of the program prior to its implementation, small pieces, modules, and experiences would be tested before being integrated for the first pilot group. The first test was not as adequate as we had hoped for, primarily because so many parts in the program and so many management procedures had not been tested. Only the

ingenuity of the staff and flexibility of students saved the day on many occasions. If we had tested more pieces in advance, the experiences of the first group might have been more nearly what was envisioned in the program design.

3. Specifying an integrated set of competencies is difficult; deleting requirements and activities from the former program which do not fit the newly stated competencies is almost impossible. We live on lore; course expectations and those favorite lectures seem to find themselves into the new venture. Faculty are reluctant to modify drastically long-cherished beliefs and practices and perhaps they should not. However, past programs would be evaluated using the new program and its listed assumptions and competencies as the benchmark.

4. When the total program is in flux, some mechanisms would be provided to maintain perspective as specific decisions are made. Negotiations within the faculty, and between the college and other institutions, are made much more complex by the decision to examine the total fabric of teacher education. The traditional balance among courses in the curriculum, faculty assignments and expectations, faculty roles, and inter-departmental relations are tried again and again as each new decision, each new program, each new perspective arises.

5. Management procedures, forms, and relationships would be clearly specified, then tested in simulation and with small groups prior to full implementation. This was a particular problem as students were unfamiliar with the needs of working in a modular approach to instruction, using video equipment, and working extensively in the Learning Resources Center. When the LRC was first opened, hours were too short; students who had responsibilities other than school complained about the inconvenience of materials that had to be used at the college; adequate copies of supporting materials were not

available; video equipment was inadequate and sometimes broken during critical periods; and seminar rooms double scheduled.

6. Personalizing programs, as we envisioned it, requires more effort and time of faculty and is inconsistent with traditional reward systems in the university. An individually-paced program conflicts with time-honored semesters; courses become too large a unit for competency description (but courses may be necessary when accounting for faculty time in a university system); students reach check points at different times, creating the need for personal accounting and ever-changing seminar groups as the individual, not the class group, becomes the unit for management; and greater resources are needed to assure adequate quantity and to replace more rapidly worn out A-V materials as individuals and small groups rather than large groups view them.

7. Registration and grading practices would be reconceptualized as most are inconsistent with principles of CBTE and individualized programs. Grading in CBTE which depends largely on criterion-referenced practices within a norm-referenced system, results in conflicts with Registrars office and academic standards.

8. Some transition system, some careful counseling, and sensitive instructional strategies would be developed to help those who were not highly motivated self-actualizers to accommodate to the program. Students, during their 12-14 years of formal education, have been handled as group told what to do, when to do it, and where to be. A CBTE program places greater responsibility on the student for his actions, and many have difficulty in assuming this role.

## In Conclusion

Would we do it again? Definitely yes! The long hours and frustrating experiences with materials inadequacies, equipment breakdowns, inadequate assistance, frustrated staff, and questioning colleagues are put in positive perspective by the potential of an evolving and more effective teacher preparation program. That is our commitment.